FIG. IA

```
   1   AATTCAACCT TAACCTTTCT TATTCTGTAG TATTCAAAGG GCACAGAGCG

  51   GGGGTTTGAG CCCCCTCCTG GGGGAAGAAA GTCATTAATA TTGAATCTCA

 101   TCATGTCCAC CGCCCAGGAG GGCGTTCTGA CTGTGGTTCG CTTGACAGTA

 151   TATCCGAAGG TGCGGGAGAG GCGGGTGTTG AAGATGCCAT TTTTCCTTCT

 201   CCAGCGGTAA CGGTGGCGGG GGTGGACGAG CCAGGGGCGG CGGCGGAGGA

 251   TCTGGCCAAG ATGGCTGCGG GGGCGGTGTC TTCTTCTCCG GTAACGCCTC

 301   CTTGGATACG TCATATCTGA AAACGAAAGA AGTGCGCTGT AAGTATTACC

 351   AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG

 401   CCGAGCAAGA AGAATGGAAG AAGCGGACCC CAACCCCATA AAAGGTGGGT

 451   GTTCACTCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGATC

 501   TTCCAATATC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG

 551   GAAGGACGAA CACCTCACCT CCAGGGGTTC GCTAATTTTG TGAAGAAGCA

 601   GACTTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA

 651   AAGCGAAAGG AACAGATCAG CAGAATAAAG AATACTGCAG TAAAGAAGGC

 701   AACTTACTGA TGGAGTGTGG AGCTCCTAGA TCTCAGGGAC AACGGAGTGA

 751   CCTGTCTACT GCTGTGAGTA CCTTGTTGGA GAGCGGGAGT CTGGTGACCG

 801   TTGCAGAGCA GCACCCTGTA ACGTTTGTCA GAAATTTCCG CGGGCTGGCT

 851   GAACTTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACTAA

 901   TGTacACGTC ATTGTGGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG

 951   CTAATTTTGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAACAAG

1001   TGGTGGGATG GTTACCATGG TGAAGAAGTG GTTGTTATTG ATGACTTTTA

1051   TGGCTGGCTG CCCTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT

1101   TGACTGTAGA GACTAAAGGT GGAACTGTAC CTTTTTTGGC CCGCAGTATT

1151   CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT

1201   CCCAGCTGTA GAAGCTCTTT ATCGGAGGAT TACTTCCTTG GTATTTTGGA
```

```
1251  AGAATGCTAC  AGAACAATCC  ACGGAGGAAG  GGGGCCAGTT  CGTCACCCTT

1301  TCCCCCCCAT  GCCCTGAATT  TCCATATGAA  ATAAATTACT  GAGTCTTTTT

1351  TATCACTTCG  TAATGGTTTT  TATTATTCAT  TAAGGGTTAA  GTGGGGGGTC

1401  TTTAAGATTA  AATTCTCTGA  ATTGTACATA  CATGGTTACA  CGGATATTGT

1451  ATTCCTGGTC  GTATATACTG  TTTTCGAACG  CAGTGCCGAG  GCCTACGTGG

1501  TCtACATTTC  CAGCAGTTTG  TAGTCTCAGC  CACAGCTGGT  TTCTTTTGTT

1551  GTTTGGTTGG  AAGTAATCAA  TAGTGGAATC  TAGGACAGGT  TTGGGGGTAA

1601  AGTAGCGGGA  GTGGTAGGAG  AAGGGCTGGG  TTATGGTATG  GCGGGAGGAG

1651  TAGTTTACAT  AGGGGTCATA  GGTGAGGGCT  GTGGCCTTTG  TTACAAAGTT

1701  ATCATCTAGA  ATAACAGCAC  TGGAGCCCAC  TCCCCTGTCA  CCCTGGGTGA

1751  TCGGGGAGCA  GGGCCAG
```

FIG.2A

```
   1   AATTCAACCT TAACCTTTCT TATTCTGTAG TATTCAAAGG GCACAGAGCG

  51   GGGGTTTGAG CCCCCTCCTG GGGGAAGAAA GTCATTAATA TTGAATCTCA

 101   TCATGTCCAC CGCCCAGGAG GGCGTTTTGA CTGTGGTTCG CTTGACAGTA

 151   TATCCGAAGG TGCGGGAGAG GCGGGTGTTG AAGATGCCAT TTTTCCTTCT

 201   CCAGCGGTAA CGGTGGCGGG GGTGGACGAG CCAGGGGCGG CGGCGGAGGA

 251   TCTGGCCAAG ATGGCTGCGG GGCGGTGTC TTCTTCTCCG GTAACGCCTC

 301   CTTGGATACG TCATATCTGA AAACGAAAGA AGTGCGCTGT AAGTATTACC

 351   AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG

 401   CCCAGCAAGA AGAATGGAAG AAGCGGACCC CAACCCCATA AAAGGTGGGT

 451   GTTCACTCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGATC

 501   TTCCAATATC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG

 551   GAAGGACGAA CACCTCACCT CCAGGGGTTC GCTAATTTTG TGAAGAAGCA

 601   GACTTTTAAT AAAGTGAAGT GGTATTGGG TGCCCGCTGC CACATCGAGA

 651   AAGCGAAAGG AACAGATCAG CAGAATAAAG AATACTGCAG TAAAGAAGGC

 701   AACTTACTGA TGGAGTGTGG AGCTCCTAgA TCTCAgGGAC AACGGAGTGA

 751   CCTGTCTACT GCTGTGAGTA CCTTGTTGGA GAGCGGGAGT CTGGTGACCG

 801   TTGCAGAGCA GCACCCTGTA ACGTTTGTCA GAAATTTCCG CGGGCTGGCT

 851   GAACTTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACTAA

 901   TGTACACGTC ATTGTGGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG

 951   CTAATTTTGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAACAAG

1001   TGGTGGGATG GTTACCATGG TGAAGAAGTG GTTGTTATTG ATGACTTTTA

1051   TGGCTGGCTG CCCTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT

1101   TGACTGTAGA GACTAAAGGT GGAACTGTAC CTTTTTTGGC CCGCAGTATT

1151   CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT

1201   CCCAGCTGTA GAAGCTCTTT ATCGGAGGAT TACTTCCTTG GTATTTTGGA
```

FIG. 2B

```
1251  AGAATGCTAC AGAACAATCC ACGGAGGAAG GGGGCCAGTT CGTCACCCTT

1301  TCCCCCCCAT GCCCTGAATT TCCATATGAA ATAAATTACT GAGTCTTTTT

1351  TATCACTTCG TAATGGTTTT TATTATTCAT TAAGGGTTAA GTGGGGGGTC

1401  TTTAAGATTA AATTCTCTGA ATTGTACATA CATGGTTACA CGGATATTGT

1451  ATTCCTGGTC GTATATACTG TTTTCGAACG CAGTGCCGAG GCCTACGTGG

1501  TCTACATTTC CAGTAGTTTG TAGTCTCAGC CACAGCTGAT TTCTTTTGTT

1551  GTTTGGTTGG AAGTAATCAA TAGTGGAATC TAGGACAGGT TTGGGGGTAA

1601  AGTAGCGGGA GTGGTAGGAG AAGGGCTGGG TTATGGTATG GCGGGAgGAG

1651  TAGTTTACAT AGGGGTCATA GGTGAgGGCT GTGGCCTTTG TTACAAAGTT

1701  ATCATCTAGA ATAACAGCAC TGGAGCCCAC TCCCCTGTCA CCCTGGGTGA

1751  TCGGGGAGCA GGGCCAG
```

FIG. 3A

```
   1  AATTCAACCT TAACCTTTTT TATTCTGTAG TATTCAAAGG GTATAGAGAT

  51  TTTGTTGGTC CCCCCTCCCG GGGGAACAAA GTCGTCAATA TTAAATCTCA

 101  TCATGTCCAC CGCCCAGGAG GGCGTTCTGA CTGTGGTAGC CTTGACAGTA

 151  TATCCGAAGG TGCGGGAGAG GCGGGTGTTG AAGATGCCAT TTTTCCTTCT

 201  CCAACGGTAG CGGTGGCGGG GGTGGACGAG CCAGGGGCGG CGGCGGAGGA

 251  TCTGGCCAAG ATGGCTGCGG GGGCGGTGTC TTCTTCTGCG GTAACGCCTC

 301  CTTGGATACG TCATAGCTGA AAACGAAAGA AGTGCGCTGT AAGTATTACC

 351  AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG

 401  CCCAGCAAGA AGAATGGAAG AAGCGGACCC CAACCACATA AAAGGTGGGT

 451  GTTCACGCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGAGC

 501  TCCCAATCTC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG

 551  GAAGGACGAA CACCTCACCT CCAGGGGTTC GCTAATTTTG TGAAGAAGCA

 601  AACTTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA

 651  AAGCCAAAGG AACTGATCAG CAGAATAAAG AATATTGCAG TAAAGAAGGC

 701  AACTTACTTA TTGAATGTGG AGCTCCTCGA TCTCAAGGAC AACGGAGTGA

 751  CCTGTCTACT GCTGTGAGTA CCTTGTTGGA GAGCGGGAGT CTGGTGACCG

 801  TTGCAGAGCA GCACCCTGTA ACGTTTGTCA GAAATTTCCG CGGGCTGGCT

 851  GAACTTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACCAA

 901  TGTACACGTC ATTGTGGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG

 951  CTAATTTTGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAACAAG

1001  TGGTGGGATG GTTACCATGG TGAAgAAGTG GTTGTTATTG ATGACTTTTA

1051  TGGCTGGCTG CCGTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT

1101  TGACTGTAGA GACTAAAGGT GGAACTGTAC CTTTTTTGGC CCGCAGTATT

1151  CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT

1201  CCCAGCTGTA GAAGCTCTCT ATCGGAGGAT TACTTCCTTG GTATTTTGGA
```

```
1251   AGAATGCTAC AGAACAATCC ACGGAGGAAG GGGGCCAGTT CGTCACCCTT

1301   TCCCCCCCAT GCCCTGAATT TCCATATGAA ATAAATTACT GAGTCTTTTT

1351   TATCACTTCG TAATGGTTTT TATTATTCAT TTAGGGTTTA AGTGGGGGGT

1401   CTTTAAGATT AAATTCTCTG AATTGTACAT ACATGGTTAC ACGGATATTG

1451   TAGTCCTGGT CGTATATACT GTTTTCGAAC GCAGTGCCGA GGCCTACGTG

1501   GTCCACATTT CTAGAGGTTT GTAGCCTCAG CCAAAGCTGA TTCCTTTTGT

1551   TATTTGGTTG GAAGTAATCA ATAGTGGAGT CAAGAACAGG TTTGGGTGTG

1601   AAGTAACGGG AGTGGTAGGA GAAGGGTTGG GGGATTGTAT GGCGGGAGGA

1651   GTAGTTTACA TATGGGTCAT AGGTTAGGGC TGTGGCCTTT GTTACAAAGT

1701   TATCATCTAG AATAACAGCA GTGGAGCCCA CTCCCCTATC ACCCTGGGTG

1751   ATGGGGGAGC AGGGCCAG
```

FIG. 3B

FIG. 4A

```
   1  AATTCAACCT TAACCTTTCT TATTCTGTAG TATTCAAAGG GTATAGAGAT

  51  TTTGTTGGTC CCCCCTCCCG GGGGAACAAA GTCGTCAATT TTAAATCTCA

 101  TCATGTCCAC CGCCCAGGAG GGCGTTGTGA CTGTGGTACG CTTGACAGTA

 151  TATCCGAAGG TGCGGGAGAG GCGGGTGTTG AAGATGCCAT TTTTCCTTCT

 201  CCAACGGTAG CGGTGGCGGG GGTGGACGAG CCAGGGGCGG CGGCGGAGGA

 251  TCTGGCCAAG ATGGCTGCGG GGGCGGTGTC TTCTTCTGCG GTAACGCCTC

 301  CTTGGATACG TCATAGCTGA AAACGAAAGA AGTGCGCTGT AAGTATTACC

 351  AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG

 401  CCCAGCAAGA AGAATGGAAG AAGCGGACCC CAACCACATA AAAGGTGGGT

 451  GTTCACGCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGAGC

 501  TCCCAATCTC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG

 551  GAAGGACGAA CACCTCACCT CCAGGGGTTC GCTAATTTTG TGAAGAAGCA

 601  AACTTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA

 651  AAGCCAAAGG AACTGATCAG CAGAATAAAG AATATTGCAG TAAAGAAGGC

 701  AACTTACTTA TTGAATGTGG AGCTCCTCGA TCTCAAGGAC AACGGAGTGA

 751  CCTGTCTACT GCTGTGAGTA CCTTGTTGGA GAGCGGGAGT CTGGTGACCG

 801  TTGCAGAGCA GCACCCTGTA ACGTTGTCA GAAATTTCCG CGGGCTGGCT

 851  GAACTTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACCAA

 901  TGTACACGTC ATTGTGGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG

 951  CTAATTTTGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAACAAG

1001  TGGTGGGATG GTTACCATGG TGAAGAAGTG GTTGTTATTG ATGACTTTTA

1051  TGGCTGGCTG CCGTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT

1101  TGACTGTAGA GACTAAAGGT GGAACTGTAC CTTTTTTGGC CCGCAGTATT

1151  CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT

1201  CCCAGCTGTA GAAGCTCTCT ATCGGAGGAT TACTTCCTTG GTATTTTGGA
```

```
1251   AGAATGCTAC AGAACAATCC ACGGAGGAAG GGGGCCAGTT CGTCACCCTT

1301   TCCCCCCCAT GCCCTGAATT TCCATATGAA ATAAATTACT GAGTCTTTTT

1351   TATCACTTCG TAATGGTTTT TATTATTCAT TTAGGGTTTA AGTGGGGGGT

1401   CTTTAAGATT AAATTCTCTG AATTGTACAT ACATGGTTAC ACGGATATTG

1451   TAGTCCTGGT CGTATTTACT GTTTTCGAAC GCAGCGCCGA GGCCTACGTG

1501   GTCCACATTT CCAGAGGTTT GTAGTCTCAG CCAAAGCTGA TTCCTTTTGT

1551   TATTTGGTTG GAAGTAATCA ATAGTGGAGT CAAGAACAGG TTTGGGTGTG

1601   AAGTAACGGG AGTGGTAGGA GAAGGGTTGG GGGATTGTAT GGCGGGAGGA

1651   GTAGTTTACA TATGGGTCAT AGGTTAGGGC TGTGGCCTTT GTTACAAAGT

1701   TATCATCTAG AATAACAGCA GTGGAGCCCA CTCCCCTATC ACCCTGGGTG

1751   ATGGGGGAGC AGGGCCAG
```

FIG. 4B

FIG.5A

```
PCVPK-15      AATTCATATTTAGCCTTTCTAATACGGTAGTATTGGAAAGGTAGGGGTAGGGGGTTGGTG
IMP999-ECO    AATTCAACCTTAACCTTTTTTATTCTGTAGTATTCAAAGGGTATAGAGATTTTGTTGGTC
IMP1010-ST    AATTCAACCTTAACCTTTCTTATTCTGTAGTATTCAAAGGGTATAGAGATTTTGTTGGTC
IMP1011-48    AATTCAACCTTAACCTTTCTTATTCTGTAGTATTCAAAGGGCACAGAGCGGGGGTTTGAG
IMP1011-48    AATTCAACCTTAACCTTTCTTATTCTGTAGTATTCAAAGGGCACAGAGCGGGGGTTTGAG
              ******   *** ***** *  ** * *******  ** ** *  *    *** *


PCVPK-15      CCGCCTGAGGGGGGGAGGAACTGGCCGATGTTGAATTTGAGGTAGTTAACATTCCAAGAT
IMP999-ECO    CCCCCTCCCGGGGGAACAAAGTCGTCAATATTAAATCTCATCATGTCCACCGCCCAGGAG
IMP1010-ST    CCCCCTCCCGGGGGAACAAAGTCGTCAATTTTAAATCTCATCATGTCCACCGCCCAGGAG
IMP1011-48    CCCCCTCCTGGGGGAAGAAAGTCATTAATATTGAATCTCATCATGTCCACCGCCCAGGAG
IMP1011-48    CCCCCTCCTGGGGGAAGAAAGTCATTAATATTGAATCTCATCATGTCCACCGCCCAGGAG
              ** ***   ***** *  ** *       ** ** *** * *    **  **   *** **


PCVPK-15      GGC--TGCGAGTATCCTCCTTTT-ATGGTGAGTACAAATTCTGTAGAAAGGCGGGAATTG
IMP999-ECO    GGCGTTCTGACTGTGGTAGCCTTGACAGTATATCCGAAGGTGCGGGAGAGGCGGGTGTTG
IMP1010-ST    GGCGTTGTGACTGTGGTACGCTTGACAGTATATCCGAAGGTGCGGGAGAGGCGGGTGTTG
IMP1011-48    GGCGTTCTGACTGTGGTTCGCTTGACAGTATATCCGAAGGTGCGGGAGAGGCGGGTGTTG
IMP1011-48    GGCGTTTTGACTGTGGTTCGCTTGACAGTATATCCGAAGGTGCGGGAGAGGCGGGTGTTG
              ***   *  ** * *  *      ** *   **    * * **      ** *******   ***


PCVPK-15      AAGATACCCGTCTTTCGGCGCCATCTGTAACGGTTTCTGAAGGCGGGGTGTGCCAAATAT
IMP999-ECO    AAGATGCCATTTTTTCCTTCTCCAACGGTAGCGGTGGC-GGGGGTGGA-CGAGCCAGGGGC
IMP1010-ST    AAGATGCCATTTTTTCCTTCTCCAACGGTAGCGGTGGC-GGGGGTGGA-CGAGCCAGGGGC
IMP1011-48    AAGATGCCATTTTTTCCTTCTCCAGCGGTAACGGTGGC-GGGGGTGGA-CGAGCCAGGGGC
IMP1011-48    AAGATGCCATTTTTTCCTTCTCCAGCGGTAACGGTGGC-GGGGGTGGA-CGAGCCAGGGGC
              ***** **  *  ** *  * *** * *** ****  * *  ** **  * ****


PCVPK-15      GGTCTTCTCCGGAGGATGTTTCCAAGATGGCTGCGGGGGCGGGTCCTTCTTCTGCGGTAA
IMP999-ECO    GG----CGGCGGAGGATCTGGCCAAGATGGCTGCGGGGGCGGTGTCTTCTTCTGCGGTAA
IMP1010-ST    GG----CGGCGGAGGATCTGGCCAAGATGGCTGCGGGGGCGGTGTCTTCTTCTGCGGTAA
IMP1011-48    GG----CGGCGGAGGATCTGGCCAAGATGGCTGCGGGGGCGGTGTCTTCTTCTCCGGTAA
IMP1011-48    GG----CGGCGGAGGATCTGGCCAAGATGGCTGCGGGGGCGGTGTCTTCTTCTCCGGTAA
              **     *  ******* *  ******************** **  ********  ******


PCVPK-15      CGCCTCCTTGGCCACGTCATCCTATAAAAGTGAAAGAAGTGCGCTGCTGTAGTATTACCA
IMP999-ECO    CGCCTCCTTGGATACGTCATAGC-TGAAAACGAAAGAAGTGCGCTGTA--AGTATTACCA
IMP1010-ST    CGCCTCCTTGGATACGTCATAGC-TGAAAACGAAAGAAGTGCGCTGTA--AGTATTACCA
IMP1011-48    CGCCTCCTTGGATACGTCATATC-TGAAAACGAAAGAAGTGCGCTGTA--AGTATTACCA
IMP1011-48    CGCCTCCTTGGATACGTCATATC-TGAAAACGAAAGAAGTGCGCTGTA--AGTATTACCA
              **********  *******   *  * ***  ***************     **********


PCVPK-15      GCGCACTTCGGCAGCGGCAGCACCTCGGCAGCG--TCAGTG--AAAATGCCAAGCAAGAA
IMP999-ECO    GCGCACTTCGGCAGCGGCAGCACCTCGGCAGCACCTCAGCAGCAACATGCCCAGCAAGAA
IMP1010-ST    GCGCACTTCGGCAGCGGCAGCACCTCGGCAGCACCTCAGCAGCAACATGCCCAGCAAGAA
IMP1011-48    GCGCACTTCGGCAGCGGCAGCACCTCGGCAGCACCTCAGCAGCAACATGCCGAGCAAGAA
IMP1011-48    GCGCACTTCGGCAGCGGCAGCACCTCGGCAGCACCTCAGCAGCAACATGCCCAGCAAGAA
              ********************************************   ****   ** ***** *******
```

FIG.5B

```
PCVPK-15     ---------AAGCGGCCCGCAACCCCATAAGAGGTGGGTGTTCACCCTTAATAATCCTTC
IMP999-ECO   GAATGGAAGAAGCGGACCCCAACCACATAAAAGGTGGGTGTTCACGCTGAATAATCCTTC
IMP1010-ST   GAATGGAAGAAGCGGACCCCAACCACATAAAAGGTGGGTGTTCACGCTGAATAATCCTTC
IMP1011-48   GAATGGAAGAAGCGGACCCCAACCCCATAAAAGGTGGGTGTTCACTCTGAATAATCCTTC
IMP1011-48   GAATGGAAGAAGCGGACCCCAACCCCATAAAAGGTGGGTGTTCACTCTGAATAATCCTTC
                      ******  *****  *****  *************  **  **********


PCVPK-15     CGAGGAGGAGAAAAACAAAATACGGGAGCTTCCAATCTCCCTTTTTGATTATTTTGTTTG
IMP999-ECO   CGAAGACGAGCGCAAGAAAATACGGGAGCTCCCAATCTCCCTATTTGATTATTTTATTGT
IMP1010-ST   CGAAGACGAGCGCAAGAAAATACGGGAGCTCCCAATCTCCCTATTTGATTATTTTATTGT
IMP1011-48   CGAAGACGAGCGCAAGAAAATACGGGATCTTCCAATATCCCTATTTGATTATTTTATTGT
IMP1011-48   CGAAGACGAGCGCAAGAAAATACGGGATCTTCCAATATCCCTATTTGATTATTTTATTGT
             *** ** ***    **  ***********  **  *****  *****  ***********  **


PCVPK-15     CGGAGAGGAAGGTTTGGAAGAGGGTAGAACTCCTCACCTCCAGGGGTTTGCGAATTTTGC
IMP999-ECO   TGGCGAGGAGGGTAATGAGGAAGGACGAACACCTCACCTCCAGGGGTTCGCTAATTTTGT
IMP1010-ST   TGGCGAGGAGGGTAATGAGGAAGGACGAACACCTCACCTCCAGGGGTTCGCTAATTTTGT
IMP1011-48   TGGCGAGGAGGGTAATGAGGAAGGACGAACACCTCACCTCCAGGGGTTCGCTAATTTTGT
IMP1011-48   TGGCGAGGAGGGTAATGAGGAAGGACGAACACCTCACCTCCAGGGGTTCGCTAATTTTGT
              **  *****  ***        **  **  **      ****  *****************  **  *******


PCVPK-15     TAAGAAGCAGACTTTTAACAAGGTGAAGTGGTATTTTGGTGCCCGCTGCCACATCGAGAA
IMP999-ECO   GAAGAAGCAAACTTTTAATAAAGTGAAGTGGTATTTGGGTGCCCGCTGCCACATCGAGAA
IMP1010-ST   GAAGAAGCAAACTTTTAATAAAGTGAAGTGGTATTTGGGTGCCCGCTGCCACATCGAGAA
IMP1011-48   GAAGAAGCAGACTTTTAATAAAGTGAAGTGGTATTTGGGTGCCCGCTGCCACATCGAGAA
IMP1011-48   GAAGAAGCAGACTTTTAATAAAGTGAAGTGGTATTTGGGTGCCCGCTGCCACATCGAGAA
              *******  *******  **  *************  ***  *********************


PCVPK-15     AGCGAAAGGAACCGACCAGCAGAATAAAGAATACTGCAGTAAAGAAGGCCACATACTTAT
IMP999-ECO   AGCCAAAGGAACTGATCAGCAGAATAAAGAATATTGCAGTAAAGAAGGCAACTTACTTAT
IMP1010-ST   AGCCAAAGGAACTGATCAGCAGAATAAAGAATATTGCAGTAAAGAAGGCAACTTACTTAT
IMP1011-48   AGCGAAAGGAACAGATCAGCAGAATAAAGAATACTGCAGTAAAGAAGGCAACTTACTGAT
IMP1011-48   AGCGAAAGGAACAGATCAGCAGAATAAAGAATACTGCAGTAAAGAAGGCAACTTACTGAT
              ***  ********  **  ****************  ****************  ****  **


PCVPK-15     CGAGTGTGGAGCTCCGCGGAACCAGGGGAAGCGCAGCGACCTGTCTACTGCTGTGAGTAC
IMP999-ECO   TGAATGTGGAGCTCCTCGATCTCAAGGACAACGGAGTGACCTGTCTACTGCTGTGAGTAC
IMP1010-ST   TGAATGTGGAGCTCCTCGATCTCAAGGACAACGGAGTGACCTGTCTACTGCTGTGAGTAC
IMP1011-48   GGAGTGTGGAGCTCCTAGATCTCAGGGACAACGGAGTGACCTGTCTACTGCTGTGAGTAC
IMP1011-48   GGAGTGTGGAGCTCCTAGATCTCAGGGACAACGGAGTGACCTGTCTACTGCTGTGAGTAC
              **  ***********  *      **  **  *  **  **  *******************


PCVPK-15     CCTTTTGGAGACGGGGTCTTTGGTGACTGTAGCCGAGCAGTTCCCTGTAACGTATGTGAG
IMP999-ECO   CTTGTTGGAGAGCGGGAGTCTGGTGACCGTTGCAGAGCAGCACCCTGTAACGTTTGTCAG
IMP1010-ST   CTTGTTGGAGAGCGGGAGTCTGGTGACCGTTGCAGAGCAGCACCCTGTAACGTTTGTCAG
IMP1011-48   CTTGTTGGAGAGCGGGAGTCTGGTGACCGTTGCAGAGCAGCACCCTGTAACGTTTGTCAG
IMP1011-48   CTTGTTGGAGAGCGGGAGTCTGGTGACCGTTGCAGAGCAGCACCCTGTAACGTTTGTCAG
              *  *  *******    ***  *  *******  **  **  *****    **********  ***  **


PCVPK-15     AAATTTCCGCGGGCTGGCTGAACTTTTGAAAGTGAGCGGGAAGATGCAGCAGCGTGATTG
IMP999-ECO   AAATTTCCGCGGGCTGGCTGAACTTTTGAAAGTGAGCGGGAAAATGCAGAAGCGTGATTG
IMP1010-ST   AAATTTCCGCGGGCTGGCTGAACTTTTGAAAGTGAGCGGGAAAATGCAGAAGCGTGATTG
IMP1011-48   AAATTTCCGCGGGCTGGCTGAACTTTTGAAAGTGAGCGGGAAAATGCAGAAGCGTGATTG
IMP1011-48   AAATTTCCGCGGGCTGGCTGAACTTTTGAAAGTGAGCGGGAAAATGCAGAAGCGTGATTG
              ***********************************************  ******  **********
```

FIG.5C

```
PCVPK-15    GAAGACAGCTGTACACGTCATAGTGGGCCCGCCCGGTTGTGGGAAGAGCCAGTGGGCCCG
IMP999-ECO  GAAGACCAATGTACACGTCATTGTGGGGCCACCTGGGTGTGGTAAAAGCAAATGGGCTGC
IMP1010-ST  GAAGACCAATGTACACGTCATTGTGGGGCCACCTGGGTGTGGTAAAAGCAAATGGGCTGC
IMP1011-48  GAAGACTAATGTACACGTCATTGTGGGGCCACCTGGGTGTGGTAAAAGCAAATGGGCTGC
IMP1011-48  GAAGACTAATGTACACGTCATTGTGGGGCCACCTGGGTGTGGTAAAAGCAAATGGGCTGC
            ******    *********** *****  **  **  ** ***** **  *** * *****

PCVPK-15    TAATTTTGCTGAGCCTAGGGACACCTACTGGAAGCCTAGTAGAAATAAGTGGTGGGATGG
IMP999-ECO  TAATTTTGCAGACCCGGAAACCACATACTGGAAACCACCTAGAAACAAGTGGTGGGATGG
IMP1010-ST  TAATTTTGCAGACCCGGAAACCACATACTGGAAACCACCTAGAAACAAGTGGTGGGATGG
IMP1011-48  TAATTTTGCAGACCCGGAAACCACATACTGGAAACCACCTAGAAACAAGTGGTGGGATGG
IMP1011-48  TAATTTTGCAGACCCGGAAACCACATACTGGAAACCACCTAGAAACAAGTGGTGGGATGG
            ********* ** **       ***.******** **      ******, ************

PCVPK-15    ATATCATGGAGAAGAAGTTGTTGTTTTGGATGATTTTTATGGCTGGTTACCTTGGGATGA
IMP999-ECO  TTACCATGGTGAAGAAGTGGTTGTTATTGATGACTTTTATGGCTGGCTGCCGTGGGATGA
IMP1010-ST  TTACCATGGTGAAGAAGTGGTTGTTATTGATGACTTTTATGGCTGGCTGCCGTGGGATGA
IMP1011-48  TTACCATGGTGAAGAAGTGGTTGTTATTGATGACTTTTATGGCTGGCTGCCCTGGGATGA
IMP1011-48  TTACCATGGTGAAGAAGTGGTTGTTATTGATGACTTTTATGGCTGGCTGCCCTGGGATGA
            **  ***** ******* ****** * ***** ************ * ** ********

PCVPK-15    TCTACTGAGACTGTGTGACCGGTATCCATTGACTGTAGAGACTAAAGGGGGGTACTGTTCC
IMP999-ECO  TCTACTGAGACTGTGTGATCGATATCCATTGACTGTAGAGACTAAAGGTGGAACTGTACC
IMP1010-ST  TCTACTGAGACTGTGTGATCGATATCCATTGACTGTAGAGACTAAAGGTGGAACTGTACC
IMP1011-48  TCTACTGAGACTGTGTGATCGATATCCATTGACTGTAGAGACTAAAGGTGGAACTGTACC
IMP1011-48  TCTACTGAGACTGTGTGATCGATATCCATTGACTGTAGAGACTAAAGGTGGAACTGTACC
            ****************** ** ********************** ** ***** **

PCVPK-15    TTTTTTGGCCCGCAGTATTTTGATTACCAGCAATCAGGCCCCCCAGGAATGGTACTCCTC
IMP999-ECO  TTTTTTGGCCCGCAGTATTCTGATTACCAGCAATCAGACCCCGTTGGAATGGTACTCCTC
IMP1010-ST  TTTTTTGGCCCGCAGTATTCTGATTACCAGCAATCAGACCCCGTTGGAATGGTACTCCTC
IMP1011-48  TTTTTTGGCCCGCAGTATTCTGATTACCAGCAATCAGACCCCGTTGGAATGGTACTCCTC
IMP1011-48  TTTTTTGGCCCGCAGTATTCTGATTACCAGCAATCAGACCCCGTTGGAATGGTACTCCTC
            ****************** ***************** ****    **************

PCVPK-15    AACTGCTGTCCCAGCTGTAGAAGCTCTCTATCGGAGGATTACTACTTTGCAATTTTGGAA
IMP999-ECO  AACTGCTGTCCCAGCTGTAGAAGCTCTCTATCGGAGGATTACTTCCTTGGTATTTTGGAA
IMP1010-ST  AACTGCTGTCCCAGCTGTAGAAGCTCTCTATCGGAGGATTACTTCCTTGGTATTTTGGAA
IMP1011-48  AACTGCTGTCCCAGCTGTAGAAGCTCTTTATCGGAGGATTACTTCCTTGGTATTTTGGAA
IMP1011-48  AACTGCTGTCCCAGCTGTAGAAGCTCTTTATCGGAGGATTACTTCCTTGGTATTTTGGAA
            *************************** ***************** * ***  ********

PCVPK-15    GACTGCTGGAGAACAATCCACGGAGGTACCCGAAGGCCGATTGAAGCAGTGGACCCACC
IMP999-ECO  GAATGCTACAGAACAATCCACGGAGGAA---GGGGGCCAGTTCGTCACCCTTTCCCCCCC
IMP1010-ST  GAATGCTACAGAACAATCCACGGAGGAA---GGGGGCCAGTTCGTCACCCTTTCCCCCCC
IMP1011-48  GAATGCTACAGAACAATCCACGGAGGAA---GGGGGCCAGTTCGTCACCCTTTCCCCCCC
IMP1011-48  GAATGCTACAGAACAATCCACGGAGGAA---GGGGGCCAGTTCGTCACCCTTTCCCCCCC
            **  ****  ***************** *    *  ****  ** *   *  *  *** **

PCVPK-15    CTGTGCCCTTTTCCCATATAAAATAAATTACTGAGTCTTTTTTGTTATCACATCGTAATG
IMP999-ECO  ATGCCCTGAATTTCCATATGAAATAAATTACTGAGTCTTTTT---TATCACTTCGTAATG
IMP1010-ST  ATGCCCTGAATTTCCATATGAAATAAATTACTGAGTCTTTTT---TATCACTTCGTAATG
IMP1011-48  ATGCCCTGAATTTCCATATGAAATAAATTACTGAGTCTTTTT---TATCACTTCGTAATG
IMP1011-48  ATGCCCTGAATTTCCATATGAAATAAATTACTGAGTCTTTTT---TATCACTTCGTAATG
            **  *    ** ****** *************************   ****** ********
```

FIG. 5D

```
PCVPK-15     GTTTTTATT-TTTATTTA---TTTA----GAGGGTCTTTTAGGATAAATTCTCTGAATTG
IMP999-ECO   GTTTTTATTATTCATTTAGGGTTTAAGTGGGGGGTCTTTAAGATTAAATTCTCTGAATTG
IMP1010-ST   GTTTTTATTATTCATTTAGGGTTTAAGTGGGGGGTCTTTAAGATTAAATTCTCTGAATTG
IMP1011-48   GTTTTTATTATTCATTAAGGGTT-AAGTGGGGGGTCTTTAAGATTAAATTCTCTGAATTG
IMP1011-48   GTTTTTATTATTCATTAAGGGTT-AAGTGGGGGGTCTTTAAGATTAAATTCTCTGAATTG
             ********* ** *** *    ** *    * ******* **  ***************

PCVPK-15     TACATAAATAGTCAGCCTTACCACATAATTTTGGGCTGTGGCTGC-ATTTTGGAGCGCAT
IMP999-ECO   TACATACATGGTTACACGGATATTGTAGTCCTGG-TCGTATATACTGTTTTCGAACGCAG
IMP1010-ST   TACATACATGGTTACACGGATATTGTAGTCCTGG-TCGTATTTACTGTTTTCGAACGCAG
IMP1011-48   TACATACATGGTTACACGGATATTGTATTCCTGG-TCGTATATACTGTTTTCGAACGCAG
IMP1011-48   TACATACATGGTTACACGGATATTGTATTCCTGG-TCGTATATACTGTTTTCGAACGCAG
             ****** ** ** *  *  *     ** * ***   **     * *  **** ** ****

PCVPK-15     AGCCGAGGCCTGTGTGCTCGACATTGGTGTGGGTATTTAAATGGAGCCACAGCTGGTTTC
IMP999-ECO   TGCCGAGGCCTACGTGGTCCACATTTCTAGAGGTTTGTAGCCTCAGCCAAAGCTGATTCC
IMP1010-ST   CGCCGAGGCCTACGTGGTCCACATTTCCAGAGGTTTGTAGTCTCAGCCAAAGCTGATTCC
IMP1011-48   TGCCGAGGCCTACGTGGTCTACATTTCCAGCAGTTTGTAGTCTCAGCCACAGCTGGTTTC
IMP1011-48   TGCCGAGGCCTACGTGGTCTACATTTCCAGTAGTTTGTAGTCTCAGCCACAGCTGATTTC
              ********** *** ** ****     ** * **    ***** ***** ** *

PCVPK-15     TTTTATTATTTGGGTGGAACCAATCAATTGTTTGGTCCAGCTCAGGTTTGGGGGTGAAGT
IMP999-ECO   TTTTGTTATTTGGTTGGAAGTAATCAATAGTGGAGTCAAGAACAGGTTTGGGTGTGAAGT
IMP1010-ST   TTTTGTTATTTGGTTGGAAGTAATCAATAGTGGAGTCAAGAACAGGTTTGGGTGTGAAGT
IMP1011-48   TTTTGTTGTTTGGTTGGAAGTAATCAATAGTGGAATCTAGGACAGGTTTGGGGGTAAAGT
IMP1011-48   TTTTGTTGTTTGGTTGGAAGTAATCAATAGTGGAATCTAGGACAGGTTTGGGGGTAAAGT
             **** ** ***** ****  ******* **    ** **  ********* ** ****

PCVPK-15     ACCTGGAGTGGTAGGTAAAGGGCTGCCTTATGGTGTGGCGGGAGGAGTAGTTAATATAGG
IMP999-ECO   AACGGGAGTGGTAGGAGAAGGGTTGGGGGATTGTATGGCGGGAGGAGTAGTTTACATATG
IMP1010-ST   AACGGGAGTGGTAGGAGAAGGGTTGGGGGATTGTATGGCGGGAGGAGTAGTTTACATATG
IMP1011-48   AGCGGGAGTGGTAGGAGAAGGGCTGGGTTATGGTATGGCGGGAGGAGTAGTTTACATAGG
IMP1011-48   AGCGGGAGTGGTAGGAGAAGGGCTGGGTTATGGTATGGCGGGAGGAGTAGTTTACATAGG
             * * ********** ***** ** **   ** ** ***************** * *** *

PCVPK-15     GGTCATAGGCCAAGTTGGTGGAGGGGGGTTACAAAGTTGGCATCCAAGATAACAACAGTGG
IMP999-ECO   GGTCATAGGTTAGGGCTGTGGCCTTTGTTACAAAGTTATCATCTAGAATAACAGCAGTGG
IMP1010-ST   GGTCATAGGTTAGGGCTGTGGCCTTTGTTACAAAGTTATCATCTAGAATAACAGCAGTGG
IMP1011-48   GGTCATAGGTGAGGGCTGTGGCCTTTGTTACAAAGTTATCATCTAGAATAACAGCACTGG
IMP1011-48   GGTCATAGGTGAGGGCTGTGGCCTTTGTTACAAAGTTATCATCTAGAATAACAGCACTGG
             ********  * *   ****     ********** **** *  ****** ** ***

PCVPK-15     ACCCAACACCTCTTTGATTAGAGGTGATGGGGTCTCTGGGGTAA
IMP999-ECO   AGCCCACTCCCCTATCACCCTGGGTGATGGGGGAGCAGGGCCAG
IMP1010-ST   AGCCCACTCCCCTATCACCCTGGGTGATGGGGGAGCAGGGCCAG
IMP1011-48   AGCCCACTCCCCTGTCACCCTGGGTGATCGGGGAGCAGGGCCAG
IMP1011-48   AGCCCACTCCCCTGTCACCCTGGGTGATCGGGGAGCAGGGCCAG
             * ** ** ** ** * *     ****** ***   * *** *
```

```
   1  GAATTCAACC TTAACCTTTT TTATTCTGTA gTATTCAAAG GGTATAaAgA

  51  TTTTGTTGGT CCCCCCTCCC GGGGGAACAA AGTCgTCAAT ATTAAATCTC

 101  ATCATGTCCA CCGCCCAGGA GGGCGTTCTG ACTGTGGTAg CCTTGACAgT

 151  ATATCCGAAG GTGCGGGAGA rGCGGGTGTT GAAAATGCCA TTTTTCCTTC

 201  TCCAACGGTA GCGGTGGCGG GGGTGGACmA nCCAcGGGCG GCGGCGGAwG

 251  ATCTGGCCAA GATGGCTGCG GGGGCGGTGT CTTCTTCTGC GGTAACGCCT

 301  CCTTGGATAC GTCATAgCTG AAAACGAAAG AAGTGCGCTG TAaGTATTAC

 351  CAGCGCACTT CGGCAGCGGC AGCACCTCGG CAGCaCCTCA GCAGCAACAT

 401  GCCCAGCAAG AAGAATGGAA GAAGCGGACC CCAACCACAT AAAAGGTGGG

 451  TGTTCACGCT GAATAATCCT TCCGAAGACG AGCGCAAGAA AATACGGGAG

 501  CTCCCaATCT CCCTATTTGA TTATTTTATT GTTGGCGAGG AGGGTwwTGA

 551  gGAAnGACgA ACACCTCACC TCCAGGGGTT CGCtAATTTT GTGAAGAAgC

 601  aaACTTtTAA TAAAGTGAAG TGGTATTTGG GTGCCCGCTG CCACATCGAG

 651  AAAGCCAaAG GAACTGATCA GCAGAATAAA GAATATTGCA GTAAAgAAGG

 701  CAACTTACTT ATTGAATGTG GAGCTCCTCG ATCTCAAGGA CAACGGAGTG

 751  ACCTGTCTAC TGCTGTGAGT ACCTTGTTGG AGAGCGGGAG TCTGGTGACC

 801  GTTGCAGAGC AGCACCCTGT AACGTTTGTC AGAAATTTCC GCGGGCTGGC

 851  TGAACTTTTG AAAGTGAGCG GGAAAATGCA GAAGCGTGAT TGGAAGACCA

 901  ATGTACACGT CATTGTGGGG CCACCTGGGT GTGGTAAAAG CAAATGGGCT

 951  GCTAATTTTG CAGACCCGGA AACCACATAC TGGAAACCAC CTAGAAACAA

1001  GTGGTGGGAT GGTTACCATG GTGAAGAAGT GGTTGTTATT GATGACTTTT

1051  ATGGCTGGCT GCCGTGGGAT GATCTACTGA GACTGTGTGA TCGATATCCA

1101  TTGACTGTAG AGACTAAAGG TGGAACTGTA CNNNNNNGG CCCGCAGTAT

1151  TCTGATTACC AGCAATCAGA CCCCGTtGGA ATGGTACTCC TCAACTGCTG

1201  TCCCAGCtGT AGAAGCTCTC TATCGGAGGA ttACTTCCTT GGTATTTtGG

1251  AaGAATGCTA CAGAACAATC CACGGAGGAA GGGGGCCAGT TnGTCACCCT
```

```
1301   TTCCCCCCCA TGCCcTGAAT TTCCATaTGA AATAAATTAC TGAGTCTTTT

1351   TTATCACTTC GTAATGGTTT TTATTATTCA TTTAGGGTTT AAGTGGGGGG

1401   TCTTTAAGAT TAAATTCTCT GAATTGTACA TACATGGTTA CACGGATATT

1451   GTAGTCCTGG TCGTATATAC TGTTTTCGAA CGCAGTGCCG AGGCCTACGT

1501   GGTCCACATT TCTAGAGGTT tGTAGCCTCA gCCAAAGCtG ATTCCTTTTG

1551   TTATTTGGTT GGAAGTAATC AATAGTGGAG TCAAGAACAG GTTTGGGTGT

1601   GAAGTAACGG GAGTGGTAGG AGAAGGGTTG GGGGATTGTA TGGCGGGAGG

1651   AGTAGTTTAC ATATGGGTCA TAGGTTAGGG CTGTGGCCTT TGTTACAAAG

1701   TTATCATcTA GAATAACAGC AGTGGAGCCC ACTCCCCTAT CACCCTGGGT

1751   GATGGGGGAG CAGGGCCA
```

FIG.6B

FIG.7B

```
              1289          1279          1269          1259          1249
8con.s  GGTGACNAACTGGCCCCC---TTCCTCCGTGGATTGTTCTGTAGCATTCTTCCAAAATAC
          |    |:||   ||||  |    |  |||||||||||||||||||  |||| ||||||||||||
pcveco  TGCTTCAAATCGGCCTTCGGGTACCTCCGTGGATTGTTCTCCAGCAGTCTTCCAAAATTG
              480          490          500          510          520          530


              1239     1229     1219     1209     1199     1189
8con.s  CAAGGAAGTAATCCTCCGATAGAGAGCTTCTACAGCTGGGACAGCAGTTGAGGAGTACCA
          ||| |  ||||||||||||||||||||||||||||||||||||||||||||||||||||||
pcveco  CAAAGTAGTAATCCTCCGATAGAGAGCTTCTACAGCTGGGACAGCAGTTGAGGAGTACCA
              540          550          560          570          580          590


             1179     1169     1159     1149     1139     1129
8con.s  TTCCAACGGGGTCTGATTGCTGGTAATCAGAATACTGCGGGCCNNNNNNNNGTACAGTTCC
          ||||       ||||  |||||||||||||||||||  |||||||||||||::::::::| |||||| ||
pcveco  TTCCTGGGGGGCCTGATTGCTGGTAATCAAAATACTGCGGGCCAAAAAAGGAACAGTACC
              600          610          620          630          640          650


             1119     1109     1099     1089     1079     1069
8con.s  ACCTTTAGTCTCTACAGTCAATGGATATCGATCACACAGTCTCAGTAGATCATCCCACGG
          ||||||||||||||||||||||||||||| || |||||||||||||||||||||||||| ||
pcveco  CCCTTTAGTCTCTACAGTCAATGGATACCGGTCACACAGTCTCAGTAGATCATCCCAAGG
              660          670          680          690          700          710


            1059     1049     1039     1029     1019     1009
8con.s  CAGCCAGCCATAAAAGTCATCAATAACAACCACTTCTTCACCATGGTAACCATCCCACCA
           |  ||||||||||| |||||| | ||||||| ||||||||| ||||| || |||||||||||
pcveco  TAACCAGCCATAAAAATCATCCAAAACAACAACTTCTTCTCCATGATATCCATCCCACCA
              720          730          740          750          760          770


             999          989          979          969          959          949
8con.s  CTTGTTTCTAGGTGGTTTCCAGTATGTGGTTTCCGGGTCTGCAAAATTAGCAGCCCATTT
          |||  ||||||   ||  |||||||||  |||        || || ||||||||||     |||||| |
pcveco  CTTATTTCTACTAGGCTTCCAGTAGGTGTCCCTAGGCTCAGCAAAATTACGGGCCCACTG
              780          790          800          810          820          830


             939          929          919          909          899          889
8con.s  GCTTTTACCACACCCAGGTGGCCCCACAATGACGTGTACATTGGTCTTCCAATCACGCTT
          ||| ||  |||||  ||  || ||  ||||| ||||||||||||    ||||||||||||||||
pcveco  GCTCTTCCCACAACCGGGCGGGCCCACTATGACGTGTACAGCTGTCTTCCAATCACGCTG
              840          850          860          870          880          890


             879          869          859          849          839          829
8con.s  CTGCATTTTCCCGCTCACTTTCAAAAGTTCAGCCAGCCCGCGGAAATTTCTGACAAACGT
          ||||||| |||||||||||||||||||||||||||||||||||||||||||||||||| ||| ||||
pcveco  CTGCATCTTCCCGCTCACTTTCAAAAGTTCAGCCAGCCCGCGGAAATTTCTCACATACGT
              900          910          920          930          940          950


             819          809          799          789          779          769
8con.s  TACAGGGTGCTGCTCTGCAACGGTCACCAGACTCCCGCTCTCCAACAAGGTACTCACAGC
          ||||||    ||||||  ||  || |||||||  |   |||  |||||||  | |||||||||||||
pcveco  TACAGGGAACTGCTCGGCTACAGTCACCAAAGACCCCGTCTCCAAAAGGGTACTCACAGC
              960          970          980          990          1000          1010
```

FIG. 7C

```
          759        749        739        729        719        709
8con.s AGTAGACAGGTCACTCCGTTGTCCTTGAGATCGAGGAGCTCCACATTCAATAAGTAAGTT
       ||||||||||| || || |  || ||    || |||||||||| || |||||||| ||
pcveco AGTAGACAGGTCGCTGCGCTTCCCCTGGTTCCGCGGAGCTCCACACTCGATAAGTATGTG
          1020       1030       1040       1050       1060       1070


          699        689        679        669        659        649
8con.s GCCTTCTTTACTGCAATATTCTTTATTCTGCTGATCAGTTCCTTTGGCTTTCTCGATGTG
       |||||||||||||| ||||||||||||||||| || |||||||| |||||||||||||||
pcveco GCCTTCTTTACTGCAGTATTCTTTATTCTGCTGGTCGGTTCCTTTCGCTTTCTCGATGTG
          1080       1090       1100       1110       1120       1130


          639        629        619        609        599        589
8con.s GCAGCGGGCACCCAAATACCACTTCACTTTATTAAAAGTTTGCTTCTTCACAAAATTAGC
       ||||||||||| |||||||||||||||| || |||||||| |||||||| ||||||| ||
pcveco GCAGCGGGCACCAAAATACCACTTCACCTTGTTAAAAGTCTGCTTCTTAGCAAAATTCGC
          1140       1150       1160       1170       1180       1190


          579        569        559        549        539        529
8con.s GAACCCCTGGAGGTGAGGTGTTCGTCNTTCCTCAWWACCCTCCTCGCCAACAATAAAATA
        |||||||||||||||| |||| |: || || ::||| ||||| ||   || ||||||
pcveco AAACCCCTGGAGGTGAGGAGTTCTACCCTCTTCCAAACCTTCCTCTCCGCAAACAAAATA
          1200       1210       1220       1230       1240       1250


          519        509        499        489        479        469
8con.s ATCAAATAGGGAGATTGGGAGCTCCCGTATTTTCTTGCGCTCGTCTTCGGAAGGATTATT
       ||||||  ||||||||||| ||||||||||||| ||    ||| || |||||||||||||
pcveco ATCAAAAAGGGAGATTGGAAGCTCCCGTATTTTGTTTTTCTCCTCCTCGGAAGGATTATT
          1260       1270       1280       1290       1300       1310


          459        449        439        429        419        409
8con.s CAGCGTGAACACCCACCTTTTATGTGGTTGGGGTCCGCTTCTTCCATTCTTCTTGCTGGG
       ||  ||||||||||||||| |||||  ||||  ||||  ||      |||||||| ||
pcveco AAGGGTGAACACCCACCTCTTATGGGGTTGCGGCCGCTT---------TTCTTGCTTGG
          1320       1330       1340       1350                  1360


          399        389        379        369        359        349
8con.s CATGTTGCTGCTGAGGTGCTGCCGAGGTGCTGCCGCTGCCGAAGTGCGCTGGTAATACT-
       ||| ||    ||||   ||||||||||||||||||||||||||||||||||||||||||||
pcveco CATTTT--CACTGA--CGCTGCCGAGGTGCTGCCGCTGCCGAAGTGCGCTGGTAATACTA
              1370       1380       1390       1400       1410


          339        329        319        309        299        289
8con.s -TACAGCGCACTTCTTTC-GTTTTCAGCTATGACGTATCCAAGGAGGCGTTACCGCAGAA
        |||||||||||||||| ||||      ||||||| |||||||||||||||||||||||||
pcveco CAGCAGCGCACTTCTTTCACTTTTATAGGATGACGTGGCCAAGGAGGCGTTACCGCAGAA
       1420       1430       1440       1450       1460       1470


          279        269        259        249        239        229
8con.s GAAGACACCGCCCCCGCAGCCATCTTGGCCAGATCWTCCGCCGCCGCCCGTGGNTKGTCC
        ||||    |||||||||||||||||||||||||| | ||| |||| | | || | :|:| |
pcveco GAAGGACCCGCCCCCGCAGCCATCTTGGAAACATCCTCCGGAGAAGACCATATTTGGCAC
       1480       1490       1500       1510       1520       1530
```

FIG.7D

```
           219              209         199        189         179
8con.s ACCCCCGCC-------ACCGCTACCGTTGGAGAAGGAAAAATGGCATTTTCAACACCCGC
       | ||||||||        |||| ||| | ||| |  |.|| |  || || ||||| |||||
pcveco A-CCCCGCCTTCAGAAACCGTTACAGATGGCGCCGAAAGACGGGTATCTTCAATTCCCGC
        1540        1550        1560      1570        1580      1590


         169       159        149        139        129        119
8con.s YTCTCCCGCACCTTCGGATATACTGTCAAGGCTACCACAGTCAGAACGCCCTCCTGGGCG
       :| |.|        || | |   || | ||| |  |  | | || |  ||| || |||
pcveco CTTTCTACAGAATTTGTACTCACCATAAAAG-GAGGATACTCGCA--GCCATCTTGGAAT
        1600        1610       1620        1630       1640        1650


         109         99          89         79         69          59
8con.s GTGGACATGATGAGATTTAATATTGACGACTTTGTTCCCCCGGGAGGGGGGACCAACAAA
        ||  ||     | | ||| || || |  | |  || | |||||   ||| || ||||||
pcveco GTTAACTACCTCAAATTCAACATCGGCCAGTTCCTCCCCCCCTCAGGCGGCACCAACCCC
         1660        1670       1680        1690       1700        1710


         49          39         29         19          9
8con.s ATCTTTATACCCTTTGAATACTACAGAATAAAAAAGGTTAAGGTT
        |        |||| ||  ||||||||| | || | |||||| |||    |
pcveco CTACCCCTACCTTTCCAATACTACCGTATTAGAAAGGCTAAATAT
        1720        1730       1740       1750
```

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